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मानक

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Mazdoor Kisan Shakti Sangathan

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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10242-3-23 (1987): Electrical installations in ships, Part 3: Equipment, Section 23: Shipboard telecommunication cables and radio frequency cables: Shipboard flexible coaxial cables [ETD 20: Electrical Installation]



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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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*Indian Standard***SPECIFICATION FOR
ELECTRICAL INSTALLATION IN SHIPS****PART 3 EQUIPMENT****Section 23 Shipboard Telecommunication Cables and Radio-Frequency
Cables; Shipboard Flexible Coaxial Cables****0. Foreword**

0.1 This standard (Part 3/Sec 23) is one amongs the series of Indian Standards on electrical installation in ships. This series will have the following parts:

- Part 1 General,
- Part 2 System design,
- Part 3 Equipment,
- Part 4 Installation and test of completed installation, and
- Part 5 Special features.

0.2 In Part 3, for ease in reference, Sections 10 to 19 have been reserved for low and medium voltage power cables while Sections 20 to 29 would deal with telecommunication and radio-frequency cables for use in ships.

0.3 This standard (Part 3/Sec 23) belongs to a series dealing with telecommunication cables and radio-frequency cables intended for transmission of information rather than the transport of energy, and constructed specially for that purpose. Other sections in this series are as follows:

- Section 24 Telephone cables for non-essential communication services,
- Section 25 General instrumentation, control and communication cables, and
- Section 26 Shipboard multicore cables for control circuits.

0.4 In the preparation of this standard, assistance has been derived from IEC Pub-92-373 (1977) 'Electrical installations in ships: Part 373 Shipboard telecommunication cables and radio-frequency cables; Shipboard flexible coaxial cables', issued by the International Electrotechnical Commission (IEC).

0.5 This part of the standard shall be read in conjunction with the other parts mentioned in 0.1.

1. Scope

1.1 This standard lays down the standard description and requirements for shipboard flexible coaxial cables.

1.2 Shipboard flexible coaxial cables are primarily intended for use with equipment suited for high-frequency signals (that is, signals with a frequency of more than 10^5 Hz) in those cases where the high-frequency signals are asymmetrical in respect to earth.

1.3 The main application is the interconnection of radio equipment and radar equipment.

2. General Description and Requirements

2.1 Shipboard flexible coaxial cables shall have an inner conductor of copper or copper-clad steel, an insulation (dielectric) of polyethylene or polytetrafluorethylene, an outer conductor of braided copper wire and a sheath of polyvinyl chloride (PVC) or a polytetrafluorethylene moisture seal taping with varnished fibre glass braid.

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The inner conductor consists of seven strands for cables with a diameter over dielectric of 12 mm or less.

The inner conductor consists of a single copper wire for cables with a diameter over dielectric of more than 12 mm.

3. Preferred Types (for Detailed Description, see Appropriate Parts of IS : 5801*)

3.1 The following cable types are recommended for shipboard use:

Type 50-7-2	Type 50-12-1	Type 75-4-1	Type 75-7-3
Type 50-7-6	Type 50-17-2	Type 75-4-2	Type 75-7-11†
Type 50-7-8†	Type 50-17-3	Type 75-7-2	Type 75-17-2

Note — Two other cable types, type 75-12-A and 75-17-A, are under consideration.

4. Other Requirements

4.1 A shipboard flexible coaxial cable shall comply with all relevant requirements mentioned for that particular cable in IS : 5026(Part 1)-1969‡ even when such requirements are not in accordance with Indian Standards in IS : 10242§ series.

4.2 When using single core cables, loops and partial loops shall be avoided, as far as possible.

4.3 Shielding effect of coaxial cables becomes fully affected only if shield is connected to earth at one end only.

4.4 Fire Retardant Test — Characteristics for flame retardant properties for such cables shall be checked in accordance with the test specified in IS : 10810 (Part 53)-1984||.

Note — Further parts under IS : 10810 covering methods of tests for checking various characteristics for flame retardant properties of the cables are under preparation. Reference to these will, therefore, be added in due course. Till such time the relevant Indian Standards are available, the flame retardant characteristics of the cables may be checked in accordance with IEC Pub 331 (1970) 'Fire-resisting characteristics of electric cables' and IEC Pub 332 (1970) 'Tests on electric cables under fire conditions'.

*Flexible coaxial radio frequency cables with characteristic impedance 50 Ω:

- Part 1-1970 Cable type 50-3-1.
- Part 2-1970 Cable type 50-3-2.
- Part 3-1970 Cable type 50-7-1.

†These cables can be used at temperatures up to 200°C.

‡General requirements and tests for radio frequency cables: Part 1 General requirements and tests.

§Specification for electrical installations in ships.

||Methods of test for cables: Part 53 Flammability test.